Pace Analytical Services, LLC
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

November 14, 2016

Tom Moe
USS Corporation
P.O. Box 417
8771 Park Ridge Dr
Mountain Iron, MN 55768

RE: Project: USS MinnTac NPDES-Line 3 Wk 1
Pace Project No.: 1278235

Dear Tom Moe:
Enclosed are the analytical results for sample(s) received by the laboratory on November 02, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Melisa M Woods
melisa.woods@pacelabs.com
Project Manager

Enclosures

cc: Cory Hertling
Terri Sabetti, NTS

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CERTIFICATIONS

Project: USS MinnTac NPDES-Line 3 Wk 1
Pace Project No.: 1278235

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842015-1
Oklahoma Department of Environmental Quality

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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SAMPLE SUMMARY

Project: USS MinnTac NPDES-Line 3 Wk 1
Pace Project No.: 1278235

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1278235001	**WS-002 Scrubber Make-Up**	Water	11/02/16 08:55	11/02/16 13:25
1278235002	**WS-003 Thickener Overflow**	Water	11/02/16 08:45	11/02/16 13:25
1278235003	**WS-003 Thickener Overflow**	Water	11/02/16 08:45	11/02/16 13:25

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: USS MinnTac NPDES-Line 3 Wk 1
Pace Project No.: 1278235

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1278235001	**WS-002 Scrubber Make-Up**	EPA 200.7	CSD	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1278235002	**WS-003 Thickener Overflow**	EPA 200.7	CSD	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1278235003	**WS-003 Thickener Overflow**	EPA 300.0	DMB	2	PASI-V

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ANALYTICAL RESULTS

Project: USS MinnTac NPDES-Line 3 Wk 1
Pace Project No.: 1278235

Sample: WS-002 Scrubber Make-Up **Lab ID: 1278235001** Collected: 11/02/16 08:55 Received: 11/02/16 13:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Calcium, Dissolved	**65.3**	mg/L	5.0	0.29	10	11/09/16 10:48	11/10/16 11:42	7440-70-2	
Magnesium, Dissolved	**217**	mg/L	5.0	0.67	10	11/09/16 10:48	11/10/16 11:42	7439-95-4	
Total Hardness, Dissolved	**1060**	mg/L	100	50.0	10	11/09/16 10:48	11/10/16 11:42		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**764**	mg/L	20.0	10.0	10		11/10/16 08:25	14808-79-8	

Sample: WS-003 Thickener Overflow **Lab ID: 1278235002** Collected: 11/02/16 08:45 Received: 11/02/16 13:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Calcium, Dissolved	**892**	mg/L	5.0	0.29	10	11/09/16 10:48	11/10/16 11:45	7440-70-2	
Magnesium, Dissolved	**11.0**	mg/L	5.0	0.67	10	11/09/16 10:48	11/10/16 11:45	7439-95-4	
Total Hardness, Dissolved	**2270**	mg/L	100	50.0	10	11/09/16 10:48	11/10/16 11:45		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**1740**	mg/L	40.0	20.0	20		11/10/16 08:47	14808-79-8	

Sample: WS-003 Thickener Overflow **Lab ID: 1278235003** Collected: 11/02/16 08:45 Received: 11/02/16 13:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**400**	mg/L	5.0	2.5	5		11/10/16 11:47	16887-00-6	
Fluoride	**9.9**	mg/L	0.50	0.25	5		11/10/16 11:47	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: USS MinnTac NPDES-Line 3 Wk 1
Pace Project No.: 1278235

QC Batch: 99629 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 MET Dissolved
Associated Lab Samples: 1278235001, 1278235002

METHOD BLANK: 395545 Matrix: Water
Associated Lab Samples: 1278235001, 1278235002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	0.029	11/10/16 10:47	
Magnesium, Dissolved	mg/L	ND	0.50	0.067	11/10/16 10:47	

LABORATORY CONTROL SAMPLE: 395546

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	49.3	99	85-115	
Magnesium, Dissolved	mg/L	50	48.8	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 395547 395548

Parameter	Units	1278395007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	18.0	50	50	66.8	67.3	98	99	70-130	1	20	
Magnesium, Dissolved	mg/L	7.9	50	50	57.4	58.1	99	100	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 395549 395550

Parameter	Units	1278311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	48.7	50	50	99.0	97.5	101	98	70-130	2	20	
Magnesium, Dissolved	mg/L	25.2	50	50	75.5	74.8	101	99	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: USS MinnTac NPDES-Line 3 Wk 1
Pace Project No.: 1278235

QC Batch: 99654 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 1278235001, 1278235002

METHOD BLANK: 395644 Matrix: Water
Associated Lab Samples: 1278235001, 1278235002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	1.0	11/09/16 18:38	

LABORATORY CONTROL SAMPLE: 395645

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	48.1	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 395646 395647

Parameter	Units	1278306001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	<1.0	50	50	48.9	48.8	98	98	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 395648 395649

Parameter	Units	1278412002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	ND	500	500	492	488	97	97	90-110	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: USS MinnTac NPDES-Line 3 Wk 1
Pace Project No.: 1278235

QC Batch: 99676 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 1278235003

METHOD BLANK: 395740 Matrix: Water
Associated Lab Samples: 1278235003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	11/10/16 09:32	
Fluoride	mg/L	ND	0.10	0.050	11/10/16 09:32	

LABORATORY CONTROL SAMPLE: 395741

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.9	98	90-110	
Fluoride	mg/L	5	4.8	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 395742 395743

Parameter	Units	1278670001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	14.1	50	50	66.0	66.0	104	104	90-110	0	20	
Fluoride	mg/L	0.34	5	5	5.2	5.3	98	98	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 395744 395745

Parameter	Units	1278311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.3	50	50	53.9	53.7	103	103	90-110	0	20	
Fluoride	mg/L	0.14	5	5	5.0	5.0	98	98	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALIFIERS

Project: USS MinnTac NPDES-Line 3 Wk 1
Pace Project No.: 1278235

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V Pace Analytical Services - Virginia

Pace Analytical Services, LLC
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Virginia, MN 55792
(218) 742-1042

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: USS MinnTac NPDES-Line 3 Wk 1
Pace Project No.: 1278235

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1278235001	**WS-002 Scrubber Make-Up**	EPA 200.7	99629	EPA 200.7	99674
1278235002	**WS-003 Thickener Overflow**	EPA 200.7	99629	EPA 200.7	99674
1278235001	**WS-002 Scrubber Make-Up**	EPA 300.0	99654		
1278235002	**WS-003 Thickener Overflow**	EPA 300.0	99654		
1278235003	**WS-003 Thickener Overflow**	EPA 300.0	99676		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

WO# : 1278235

PM: MMW Due Date: 11/16/16

CLIENT: USS CORP

Page: 1 Of 1

Section A
Required Client Information:

Company:	USS Corporation
Address:	P.O. Box 417
	Mountain Iron, MN 55768
Email:	tmoe@uss.com
Phone:	(218)749-7485 Fax:
Requested Due Date:	

Section B
Required Project Information:

Report To:	Tom Moe
Copy To:	
Purchase Order #:	
Project Name:	NPDES-LINE 3 Wk1
Project #:	

Section C
Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote	
Pace Project Manager:	
Pace Profile #:	

Regulatory Agency

State / Location

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test Y/N	Requested Analysis Filtered (Y/N): LAB FILTERED: SO4	Lab FILTERED: Ca,Mg,Hard	Cl,F	Residual Chlorine (Y/N)	
1	WS-002 Scrubber Make-Up	WT		11-2-16	08:55	11-2-16	08:55																	
2	WS-003 Thickener Overflow	WT		11-2-16	08:45	11-2-16	08:45												X	X			LAB FILTERED,LAB FILTERED
3	WS-003 Thickener Overflow	WT		11-2-16	08:45	11-2-16	08:45												X	X			LAB FILTERED,LAB FILTERED
4																					X		
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Jason K Beason	11-2-16	13:20	[illegible]	11-2-16	1:25	3.8	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jason K Beason

SIGNATURE of SAMPLER: Jason K Beason

DATE Signed: 11-2-16

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: F-VM-C-001-Rev.09	Issuing Authority:

WO# : 1278235

1278235

Sample Condition Upon Receipt

Client Name: USS

Project #:

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No Seals Intact? ☐ Yes ☑ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other: Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 140792808 Type of Ice: ☑ Wet ☐ Blue ☐ None ☑ Samples on ice, cooling process has begun

Cooler Temp Read °C: 3.5 Cooler Temp Corrected °C: 3.8 Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: CM 11-2-16

Comments:

Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☑ Yes	☐ No	☑ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☑ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Carrie Jern Date: 11/3/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)